

REMARKS

Status Summary

Claims 1-55 are pending in the present application. Claims 22-49 have been allowed, and claims 1-11, 17, and 50-55 presently stand rejected.

Specification

The specification has been amended to correct a typographical error.

Information Disclosure Statement

In paragraph 1, the Official Action indicated that the Information Disclosure Statement filed on January 30, 2004 failed to comply with 37 C.F.R. § 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. Applicants respectfully submit that the information disclosure statement filed on January 30, 2004 complies with 37 C.F.R. § 1.98(a)(1) because the non-patent publications were listed in the Information Disclosure Statement and 37 C.F.R. § 1.98 does not require that non-patent publications be listed on a PTO form 1449 accompanying the Information Disclosure Statement. Nonetheless, Applicants have added the non-patent publications to the attached PTO Form 1449. It is assumed that the official file already contains copies of the submitted documents for the Examiner to review and that no statement or fee is required to admit the IDS, since the IDS was properly submitted prior to the first official action on the merits and is merely being supplemented by the attached PTO Form 1449 to expedite matters. The Examiner is respectfully requested to return an Examiner-initialed copy of the attached PTO Form 1449 to the undersigned.

In addition, the Examiner has not returned initialed copies of the electronic information disclosure statements submission, which were submitted by the Applicants on October 31, 2002. Copies of the submissions are attached for the Examiner's convenience. The Examiner is respectfully requested to return an Examiner initialed copy of these forms to the undersigned.

Claim Objections

Claims 2-8, 9, 11-13, 29, 50, and 52 were objected to as containing informalities. Claims 2-8, 9, 11-13, 29, 50, and 52 have been amended in accordance with the Examiner's suggestions merely to address the informalities raised in the Action under the rules of the Office. Thus, these amendments were made for reasons unrelated to the statutory requirements for a patent and have not narrowed the scope of the claims. Accordingly, the amendment of these claims does not raise any presumptions regarding, nor trigger the application of the doctrine of prosecution history estoppel to limit the range of equivalents.

Claim Rejection - 35 U.S.C. § 112

Claims 10 and 50-55 were rejected as indefinite under 35 U.S.C. § 112, second paragraph. Claims 10 and 50-55 have been amended to make explicitly clear that which was already at least implicitly clear from the claims. These amendments were made for reasons unrelated to the statutory requirements for a patent and have not narrowed the scope of the claims. Accordingly, the amendment of these claims does not raise any presumptions regarding, nor trigger the application of the doctrine of prosecution history estoppel to limit the range of equivalents.

Claim Rejection - 35 U.S.C. § 103

Claims 1 and 11 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,680,953 to Kim, hereinafter referred to as "Kim", in view of Internet Draft, "Transport SS7 Signaling over IP" by McGrew, hereinafter referred to as "McGrew". This rejection is respectfully traversed as described below.

Claim 1 defines a method for communicating a radio access network (RAN) signaling message between a radio network controller (RNC) and a core switching network. The method includes receiving, from an RNC, a RAN signaling message that includes an asynchronous transfer mode (ATM) protocol component, an SS7 protocol component, and an application part protocol component, encapsulating the application part protocol component of the RAN signaling message within a first protocol envelope, replacing the ATM protocol component of the RAN signaling message with a non-ATM protocol component, and transmitting the RAN signaling message as modified to a core network. Thus, claim 1 now recites encapsulating an application part of the RAN signaling message that is distinct from the SS7 part of the RAN signaling message.

As illustrated in Figure 7 of the present application, protocol stack **200** represents the structure of a message received by RAN gateway **304** from an ATM-based radio network controller. Such a message includes an application part protocol component of a RAN signaling message, e.g., a RANAP component, as well as an SS7 component, e.g., an SCCP component and an MTP3B component, and an ATM component. RAN gateway **304** removes the RANAP and SCCP components from the message and encapsulates these components in an SUA wrapper (a first protocol envelope). The SUA-encapsulated message may also then be encapsulated in an SCTP/IP wrapper.

The transformed message is illustrated by protocol stack **700**. In protocol stack **700**, the transformed message includes a RANAP portion, an SCCP portion, an SUA portion, an SCTP portion, and an IP portion. ATM components of the original message are removed. Accordingly, the need for ATM functionality in the core network is reduced.

When RAN gateway **304** receives a message formatted according to protocol stack **700**, RAN gateway **304** removes the RANAP and SCCP portions of the message and discards the lower-level SUA, SCTP, and IP portions. RAN gateway **304** then adds MTP3B, SSCF-NNI, SSCOP, AAL5, and ATM components to the RANAP and SCCP components. The resulting message is formatted according to protocol stack **200**. This message can then be forwarded to an ATM-based RNC. Accordingly, because RAN gateway **304** is capable of formulating ATM-based RANAP messages based on SCT/IP-based RANAP messages, no modifications are required to existing radio network controller design.

To establish a prima facie case of obviousness, the cited documents must teach or suggest all of the claim limitations. The rejections cannot stand at least because no combination of the cited documents teaches all of the claim limitations.

On page 5, The Official Action admits that Kim does not disclose encapsulating the application part protocol component of the RAN signaling message within a first protocol envelope or replacing the ATM protocol component of the RAN signaling message with a non-ATM protocol component, but contends that McGrew does. Applicants respectfully disagree.

McGrew discloses on page 3 that SS7 information is encapsulated in an envelope. Examples given for the information are ISUP, SCCP, MTP, and TCAP. The

envelope is then transported over TCP/IP. Nowhere does McGrew teach or suggest encapsulating an application part protocol component of a RAN signaling message, as defined in claim 1. In contrast, McGrew discloses encapsulating SS7 information, which is quite different than an application part of a RAN signaling message. The language of claim 1 has been amended to distinguish between the application part component and the SS7 component of the RAN signaling message.

McGrew is expressly limited to transporting SS7 signaling over an IP network (see "1.0 Purpose and Scope," on page 1). There is no mention of encapsulating a RANAP, or of any radio access network functionality, such as those described above. Claim 1 defines a method for communicating a radio access network (RAN) signaling message between a radio network controller (RNC) and a core switching network. The simple encapsulation of SS7 protocols defined by McGrew would not teach or suggest to one of ordinary skill in this art to encapsulate RANAP components of RAN messages as defined by claim 1, at least because McGrew specifically limits its application to SS7, which does not support RANAP or its functionality, as defined by the RANAP specification outlined above.

Accordingly, since the combination of Kim and McGrew fails to teach or suggest all of the claim limitations for at least the above reasons, the rejections of claim 1 and claim 11 (which depends from 1) should be withdrawn.

Claims 2-8 stand rejected under 35 U.S.C. §103(a) as unpatentable over Kim and McGrew in view of Figure 2 of the present application. This rejection is respectfully traversed as described below.

Claims 2-8 depend from claim 1. As stated above, Kim and McGrew fail to teach or suggest encapsulating an application part of a RAN signaling message that is distinct from the SS7 part of the RAN signaling message in a first protocol envelope. Figure 2 of the present application likewise lacks such teaching or suggestion. Figure 2 is directed to conventional protocol layers used in the core network and in the SS7 signaling network in current implementations. With regard to the RANAP layer, Figure 2 illustrates that the RANAP layer is encapsulated in an SCCP layer which is in turn encapsulated in MTP3B and ATM layers. There is absolutely no teaching or suggestion in Figure 2 of encapsulating the RANAP layer in a first protocol envelope that is distinct from the SS7 and ATM layers. Accordingly, the rejection of claims 2-8 as unpatentable over Kim and McGrew in view of Figure 2 of the present application should be withdrawn.

Claim 17 stands rejected under 35 U.S.C. §103(a) as unpatentable over Kim and McGrew in view of U.S. Patent No. 5,008,929 to Olson et al., hereinafter referred to "Olson". This rejection is respectfully traversed as described below.

Claim 17 depends from claim 1. As stated above with regard to the rejection of claim 1, Kim and McGrew fail to teach or suggest encapsulating an application part of a radio access network message which is distinct from the SS7 part of the radio access network message in a first protocol envelope. Olson likewise lacks such teaching or suggestion. Olson is directed to a billing system for a wireline telecommunications signaling network and does not mention any radio access network protocols. Accordingly, it is respectfully submitted that the rejection of claim 17 as unpatentable over Kim and McGrew in view of Olson should be withdrawn.

Allowable Claims

Claims 22-49 are allowed.

Claims 9, 12-16, and 18-21 were objected to as being dependent upon a rejected base claim but were indicated as allowable if rewritten in independent form. Claim 9 has been combined with claims 1 and 7, from which claim 9 depends, and rewritten as new independent claim 9. Accordingly, claim 9 should be allowed.

Claim 12 has been combined with claim 1 and rewritten as independent claim 12. Accordingly, claim 12 should now be allowed.

Claim 13 has been combined with claim 1 and rewritten as independent claim 13. Accordingly, claim 13 should now be allowed.

Claim 14 has been combined with claim 1 and rewritten as independent claim 14. Accordingly, claim 14 should now be allowed.

Claims 15 and 16 depend from claim 14. Accordingly, claims 15 and 16 should be allowed.

Claim 18 has been combined with claim 17 and rewritten as claim 18. Accordingly, claim 18 should now be allowed.

Claim 19 has been combined with claim 17 and rewritten as claim 19. Accordingly, claim 19 should now be allowed.

Claim 20 has been combined with claim 17 and rewritten as claim 20. Accordingly, claim 20 should now be allowed.

Claim 21 has been combined with claim 17 and rewritten as claim 21. Accordingly, claim 21 should now be allowed.

Claim 10 was indicated as allowable if rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph, and if combined with the base claim and any intervening claims. Claim 10 has been rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph as described above. Claim 10 has been combined with claim 1 and rewritten as claim 10. Accordingly, claim 10 should now be allowed.

New Claims

New dependent claims 56-66 have been added. Support for new claims 56-66 is found, for example, in Figure 7 of the subject application. New claims 56-66 are patentable over the documents cited in the Official Action for the same reasons as the corresponding independent claims, and, in addition, for the limitations recited in the new claims.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

DEPOSIT ACCOUNT

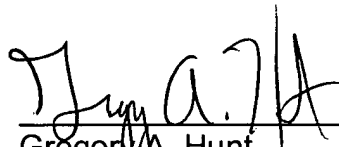
The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON & TAYLOR, P.A.

Date: November 29, 2004

By:

A handwritten signature in black ink, appearing to read "Gregory A. Hunt", written over a horizontal line.

Gregory A. Hunt
Registration No. 41,085

Customer No. 25297

1322/61 GAH/TT/gwc/sed